

WHAT IS CLAIMED IS:

5       1. An FM-CW radar system which frequency-modulates a voltage-controlled oscillator by applying thereto a modulating signal from a modulating signal generator, and which transmits a frequency-modulated wave by time division ON-OFF control and receives a reflected wave by time division ON-OFF control, wherein

10               said system includes means for varying a frequency used to perform said time division ON-OFF control, and means for discriminating a signal component varying in response to the variation of said frequency, thereby discriminating a signal related to a target object from other signals.

15               2. An FM-CW radar system as claimed in claim 1, wherein said time division ON-OFF control is performed either when transmitting or when receiving.

20               3. An FM-CW radar system as claimed in claim 1, wherein said modulating signal is a signal in the form of a triangular wave, and said means for varying said transmission/reception switching frequency varies said frequency for each pair of upward and downward slopes of said triangular wave or every plurality of said pairs.

25               4. An FM-CW radar system as claimed in claim 1, wherein said modulating signal is a signal in the form of a triangular wave, and said means for varying said transmission/reception switching frequency varies said frequency for each of upward and downward slopes of said triangular wave.

30               5. An FM-CW radar system as claimed in claim 1, wherein said means for varying said transmission/reception switching frequency switches said frequency randomly.

35               6. An FM-CW radar system which frequency-modulates a voltage-controlled oscillator by applying thereto a modulating signal from a modulating signal generator, and which transmits

a frequency-modulated wave and receives a reflected wave,  
wherein

5                   said system is of a single-antenna type which  
switches between transmission and reception by time division,  
and includes means for varying a frequency used for said  
transmission/reception switching, and means for discriminating  
a signal component varying in response to the variation of  
10          said frequency, thereby discriminating a signal related to a  
target object from other signals.

15          7. An FM-CW radar system as claimed in claim 6, wherein  
said modulating signal is a signal in the form of a triangular  
wave, and said means for varying said transmission/reception  
switching frequency varies said frequency for each pair of  
upward and downward slopes of said triangular wave or every  
plurality of said pairs.

20          8. An FM-CW radar system as claimed in claim 6, wherein  
said modulating signal is a signal in the form of a triangular  
wave, and said means for varying said transmission/reception  
switching frequency varies said frequency for each of upward  
and downward slopes of said triangular wave.

25          9. An FM-CW radar system as claimed in claim 6, wherein  
said means for varying said transmission/reception switching  
frequency switches said frequency randomly.

30          10. A heterodyne FM-CW radar system which frequency-  
modulates a voltage-controlled oscillator by applying thereto  
a modulating signal from a modulating signal generator, and  
which transmits a frequency-modulated wave and receives a  
reflected wave, wherein

35                   said system includes means for varying the  
frequency of a downconverting signal (IF signal), and means  
for discriminating a signal that varies in response to the  
variation of the frequency of said IF signal when said  
frequency is varied, thereby enabling a signal related to a

target object from being discriminated from other signals.

5       11. A heterodyne FM-CW radar system as claimed in claim  
10, wherein said modulating signal is a signal in the form of  
a triangular wave, and said means for varying the frequency of  
said IF signal varies said frequency for each pair of upward  
and downward slopes of said triangular wave or every plurality  
of said pairs.

10      12. A heterodyne FM-CW radar system as claimed in claim  
10, wherein said modulating signal is a signal in the form of  
a triangular wave, and said means for varying the frequency of  
said IF signal varies said frequency for each of upward and  
downward slopes of said triangular wave.

15      13. An FM-CW radar system which frequency-modulates a  
voltage-controlled oscillator by applying thereto a modulating  
signal from a modulating signal generator, and which transmits  
a frequency-modulated wave by time division ON-OFF control and  
receives a reflected wave by time division ON-OFF control,  
20       wherein

          said system includes means for varying a  
pattern of said time division ON-OFF control, thereby  
suppressing signal generation due to targets other than a  
target object.

25      14. An FM-CW radar system as claimed in claim 13, wherein  
said pattern includes a prescribed OFF period.

30      15. An FM-CW radar system which frequency-modulates a  
voltage-controlled oscillator by applying thereto a modulating  
signal from a modulating signal generator, and which transmits  
a frequency-modulated wave and receives a reflected wave,  
wherein

35       said system is of a single-antenna type which  
switches between transmission and reception by time division,  
and includes means for varying a pattern of a frequency used  
for said transmission/reception switching, thereby suppressing

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signal generation due to targets other than a target object.

5       16. An FM-CW radar system as claimed in claim 15,  
wherein said pattern includes a prescribed OFF period.

10      17. An FM-CW radar system which frequency-modulates a  
voltage-controlled oscillator by applying thereto a modulating  
signal from a modulating signal generator, and which transmits  
a frequency-modulated wave and receives a reflected wave,  
wherein

15      said system includes means for making said  
frequency modulation vary nonlinearly and means for  
discriminating a frequency distribution of a received signal,  
and discriminates a target object based on said discriminated  
frequency distribution.

20      18. An FM-CW radar system as claimed in claim 17, wherein  
said frequency modulation varies nonlinearly in the form of an  
arc.

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